DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
PO BOX 1890
WILMINGTON NC 28402-1890

INFORMATION REGARDING COMPLIANCE WITH THE FEDERAL CLEAN WATER ACT SECTION 404(F)(1) PROVISIONS FOR THE CONSTRUCTION OF FOREST ROADS WITHIN WETLANDS, IN NORTH CAROLINA

Prepared By:
US Army Corps of Engineers,
Wilmington District, Regulatory Division

November 9, 2004

This document is intended to provide information to North Carolina landowners and managers, related to performing forestry activities within waters of the U.S. including streams and wetlands subject to regulation under Section 404 of the Clean Water Act (CWA) [1]. Section 404(f)(1) of the CWA lists several categories of activities that are exempt from CWA Section 404 permit requirements. Included in this list is the construction or maintenance of forest roads provided such activity adheres to all applicable best management practices (BMPs) including the baseline provisions listed at 33 CFR 323.4(a)(6).

The information included here was developed through coordination between the US Army Corps of Engineers (USACE), Wilmington District and the North Carolina Division of Forest Resources (NCDFR). This information should be used when planning for and constructing new forest roads and maintaining existing roads within waters of the US including streams and wetlands subject to CWA regulation (jurisdictional waters and/or wetlands). While the dimensions and specifications recommended here are not binding on any forestry activity or operation, they should be adequate for normal operations under most conditions. Landowners and managers should, when practicable, adhere to these recommendations to ensure compliance with the applicable BMPs.

This document is not intended to be all-inclusive. Operations adhering to these specifications may be assured that they are in compliance with the baseline provisions related to the minimization of forest road number, width, and total length (33 CFR 323.4(a)(6)(i)), and maintenance of flows and circulation patterns (33 CFR 323.4(a)(6)(iii)). In order to ensure that forest road construction maintains exempt status, landowners and managers are required to abide by all of the baseline provisions listed at 33 CFR 323.4(a)(6) as well as all applicable State BMP's and regulations. Those BMPs and baseline provisions not specifically addressed here remain in effect and compliance with these is required. Landowners and managers should

[1] Waters of the U.S. is defined at 33 CFR 328.3(a): Generally, the term waters of the U.S. includes; 1) all navigable waters, 2) all tributaries of navigable waters, which may include perennial or intermittent streams, modified streams or man-made ditches that discharge either directly or eventually into navigable waters, 3) all impoundments of navigable waters or their tributaries, such as sounds, ponds or lakes, and 4) any wetlands adjacent to navigable waters or their tributaries.

Road Placement

Every attempt should be made to limit the number and length of forest roads to the minimum feasible. This is best accomplished by responsible planning prior to road construction. In most cases, skidding distances of ¼ mile are reasonable, and result in minimal damage to the site and the timber resource. Therefore, forest roads should normally be constructed a minimum of ½ mile apart and should terminate no closer to the outer boundary of the logging or timber management areas being accessed than ¼ mile.

Road Construction

It is generally accepted that single lane roads with periodic turnouts are sufficient for most normal forestry activities. It is also commonly accepted that most operations large enough in scale to necessitate road construction will employ tractor-trailer type logging trucks. Road top widths should therefore normally be limited to the travel surface necessary to accommodate single lane tractor–trailer traffic plus additional shoulders appropriate to provide adequate safety and road stability. Travel surfaces 12 to 14 feet wide, with a maximum 3 to 4 foot wide shoulder on each side are in most cases sufficient. This would result in a total top width of 18 to 22 feet **(Figure 1)**.

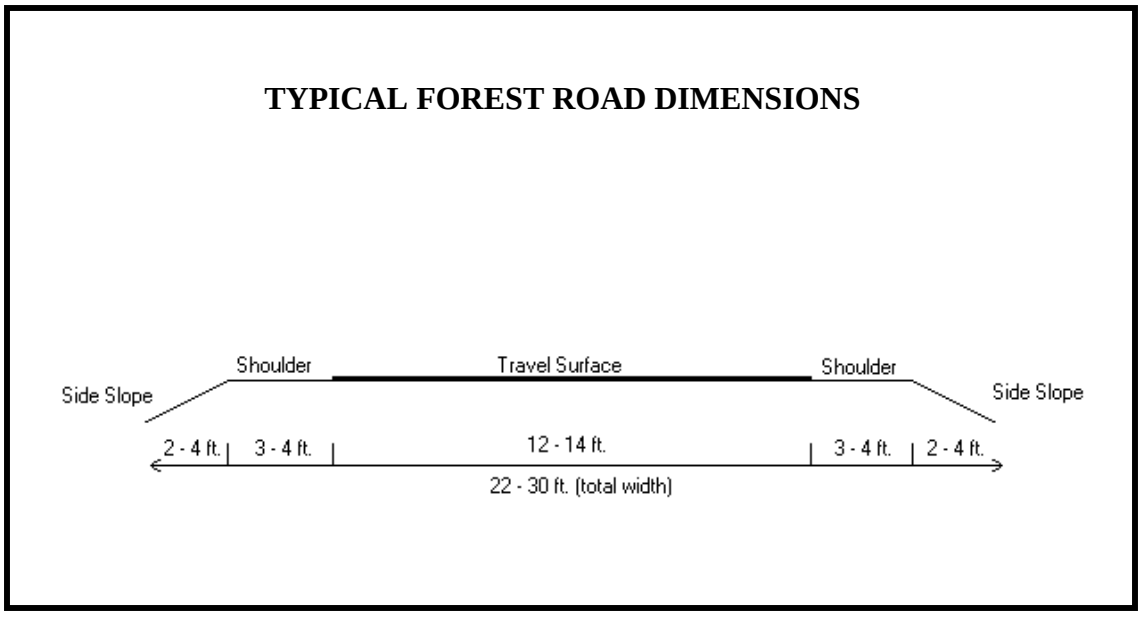

Figure 1. Dimensions of a typical forest road constructed in wetlands. In general a top width of 18 – 22 ft., made up of a 12 – 14 ft. wide travel surface with 3 – 4 ft. shoulders on either side, should be sufficient. Road heights of 1 – 2 ft. with 2:1 side slopes will result in total widths of 22 – 30 ft.

Road height will be largely dependant on site conditions and access requirements. The height of a road and corresponding side slopes should be kept to the minimum necessary for silviculture activities to be conducted safely and economically. Typically, 2:1 side

slopes will provide sufficient stability for roads used in normal silvicultural operations. In most instances where forest roads are constructed by excavation of material from adjacent borrow ditches or swales, a final road height of 1 to 2 feet above the existing substrate is adequate. Using a slope ratio of 2:1, side slopes on a 1 to 2 foot high road will normally be 2 to 4 feet wide on each side of the road **(Figure 1)**.

Turnouts are areas designed to allow vehicular traffic to pass. These areas should be of adequate width to allow two tractor-trailer units to safely pass one another. In most cases, twice the total top width discussed previously (18 to 22 feet) plus an adequate safety margin should be sufficient. The length of each turnout should be limited to that necessary for one unit to pull over and stop, allowing a second unit to pass. Spacing of these turnouts will be determined by horizontal sight distance and traffic loads. Normally, forest roads are low traffic roads and, in flatter terrain, have ample horizontal sight distances, allowing turnouts to be spaced at ½ mile intervals.

Where it is not practicable to obtain fill material for use in road construction from an upland source, it is common practice to borrow this material from onsite wetland areas by excavating a borrow ditch or swale immediately adjacent the roadway being constructed. As stated in 33 CFR 323.4(c), activities will require a permit if such activities act to reduce the reach of Waters of the United States. In other words, the borrow ditches should not be constructed in a manner that would facilitate draining or significantly modifying the hydrology of the wetland area. Borrow ditches or swales should not be connected either permanently or temporarily to any outfall including existing drainage ditches, canals, creeks, streams or other natural or man-made drainage features. To avoid unintended drainage resulting from a hydraulic connection between a borrow ditch and an existing drainage feature, borrow ditches should terminate a sufficient distance from the existing drainage feature (generally 50 – 150 ft, depending on soil type and site conditions).

It is further stated in 33 CFR 323.4(c) that activities will require a permit if such activities act to impair the flows or circulation of Waters of the United States. Therefore, roads should be culverted or bridged across sloughs, streams, natural drains, or areas of ponded or standing water to allow for natural lateral movement of surface waters from one side of the road to the other.

MAINTENANCE OF EXISTING ROADS

As specified in 33 CFR 330.3, activities occurring in certain jurisdictional areas after the listed "phase-in-dates"[2] are subject to the permit requirements of Section 404. Activities occurring prior to these phase-in-dates were permitted by Nationwide Permits issued July

[2] The "phase-in-dates" are as follows: July 25, 1975, for discharges into navigable waters of the United States and adjacent wetlands; September 1, 1976, for discharges into navigable waters of the United States and their primary tributaries, including adjacent wetlands, and into natural lakes, greater than 5 acres in surface area; and July 1, 1977, for discharges into all waters of the United States, including wetlands.

19, 1977 and require no further permitting provided they are not modified. Therefore, roads constructed in wetlands prior to these phase-in-dates are, by statue, permitted, regardless of dimension and there is no need to apply these guidelines. Maintenance of these existing roads would not require a permit provided the maintenance activity does not substantially exceed the scale of the original construction (e.g. enlarging from single to double lane, extending into new area, adding fill material to areas not previously filled). If an existing road, installed prior to the phase-in dates, is substantially modified, that modification must comply with the exemption or be permitted. Any road constructed in waters of the US after July 1977 must comply with the necessary BMP's and Baseline Provisions in order to be considered exempt. Roads constructed in waters of the US that do not meet the exemption criteria and were not permitted, are unauthorized activities.

We fully realize that the guidelines included here may not be feasible for all operations. These specifications are intended for normal forestry operations under most conditions. Landowners and managers may utilize these guidelines as an aid in determining when construction or maintenance of forest roads would be considered exempt pursuant to CWA Section 404(f)(1).

Large-scale operations and/or operations carried out on tracts presenting atypical environmental or logistical concerns may require deviation from these recommendations. Operations exceeding these specifications will not necessarily be considered non-exempt. However, landowners and managers may be required to adequately demonstrate the need for the additional construction. Landowners and managers whose operations may exceed these recommendations are encouraged to contact the NCDFR or the local Corps Regulatory office prior to initiating work to ensure the discharge is not prohibited by, or otherwise subject to, regulation under CWA Section 404.